

FIG. 1

- 1 image input unit;
- 2 memory unit;
- 5 control unit;
- 4 image output unit;
- 3 image quality improving process unit;
- 38 averaged value calculating unit;
- 36 improved domain block forming unit;
- 34 reduced range block forming unit;
- 31 domain block extracting unit;
- 37 edge enhancement processing unit;
- 35 similarity degree judging unit;
- 33 range block extracting unit;
- 32 domain block classifying unit;

FIG. 2

- S61 extract domain block image from original image;
- S62 classify domain block image;
- S63 edge portion, or noise portion?
- S64 extract range block image from a neighborhood of domain block image;
- S65 form reduced range block image;
- S66 calculate least-squares-error of pixel values between domain block image and reduced range block image, select reduced range block image having pixel value and pattern, which are the most similar to

those of domain block image, and extract pixel value  
conversion parameters "a" and "b";

S67 form improved domain block image;

S68 edge portion?

S69 execute edge enhancement processing operation;

S70 add/write into memory;

S71 all of domain blocks have been processed?

S72 calculate averaged value;

FIG. 5

S81 calculate averaged value "Dv" and standard deviation  
"VDv" of pixel values of domain block image;

S83 classify as noise portion;

S85 classify as flat portion;

S86 concave/convex amount < Sv4?

S87 classify as edge portion;

S88 classify as texture portion;

FIG. 12

3 image quality improving process unit;

6 enlarging process unit;

~~書類名~~

~~図面~~

FIG. 1

~~図 1~~

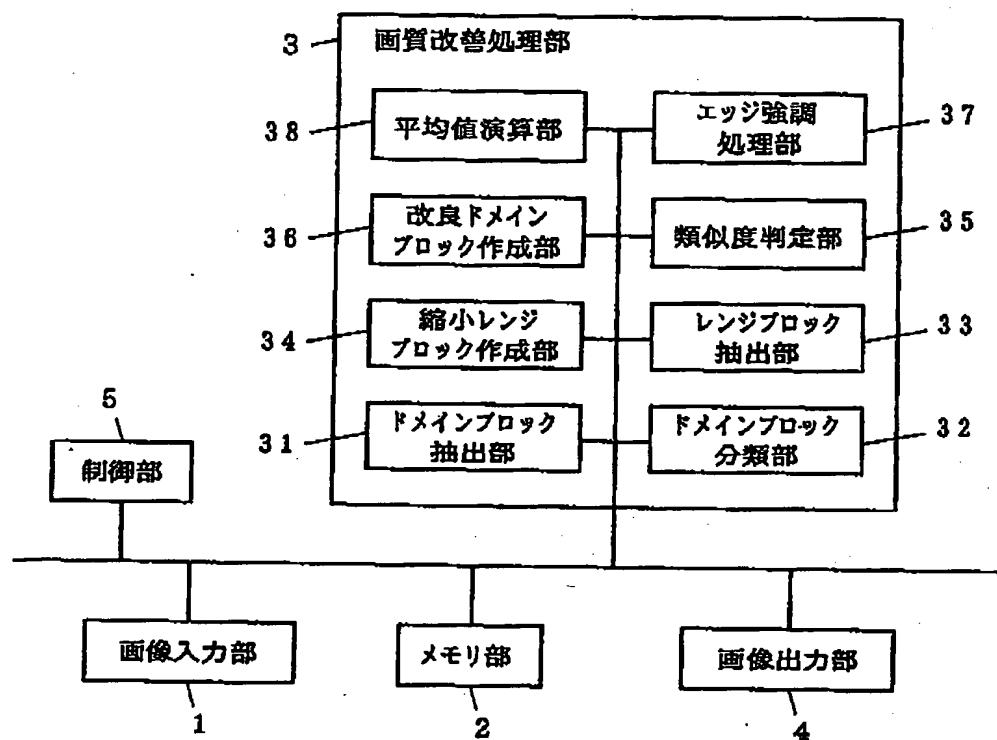
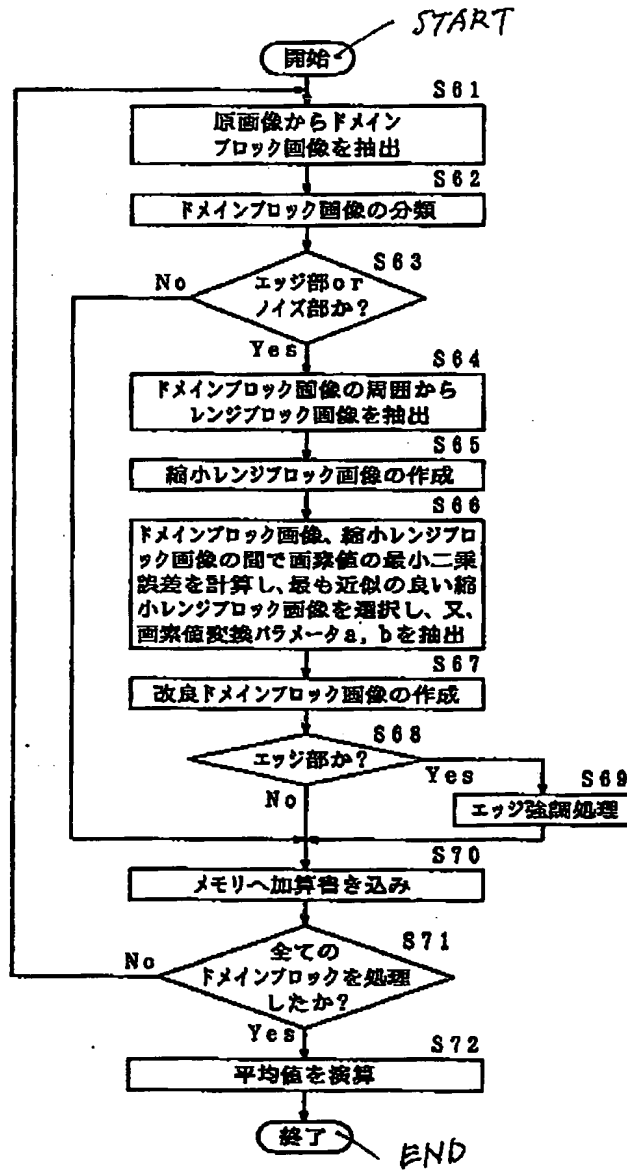


FIG. 2

図2



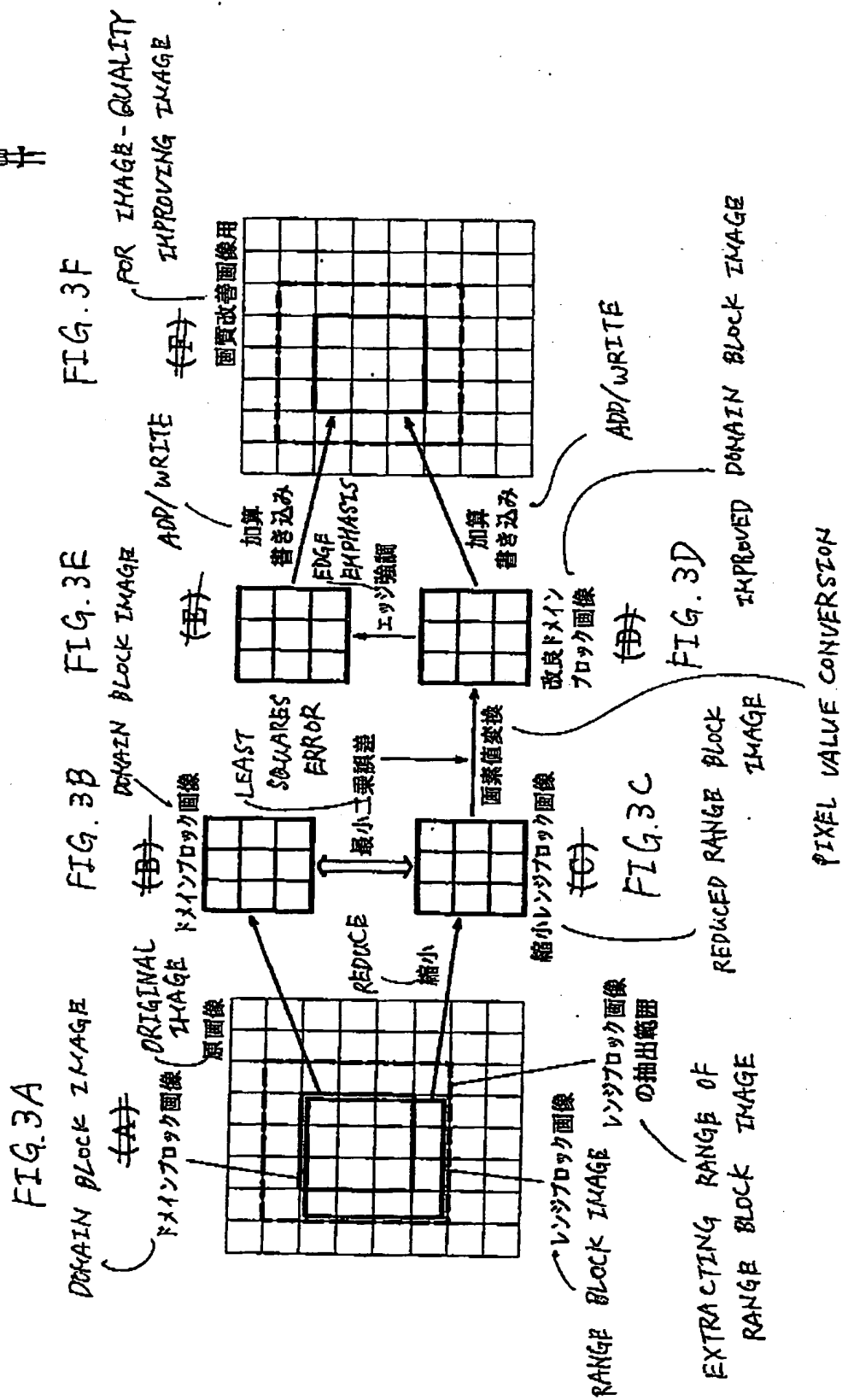
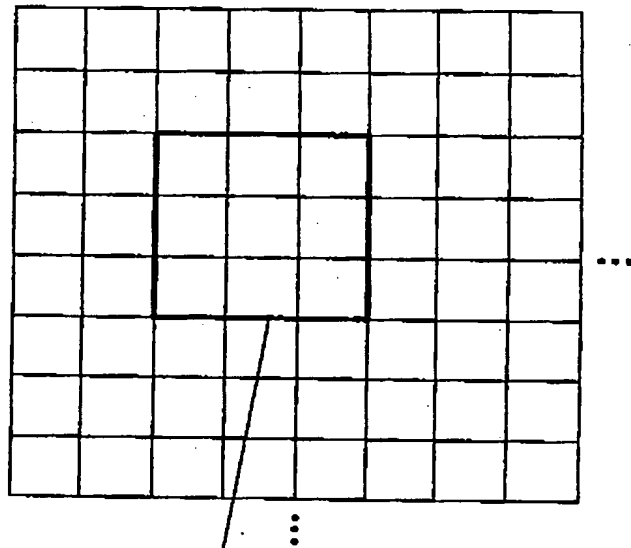


FIG. 4

~~図4~~

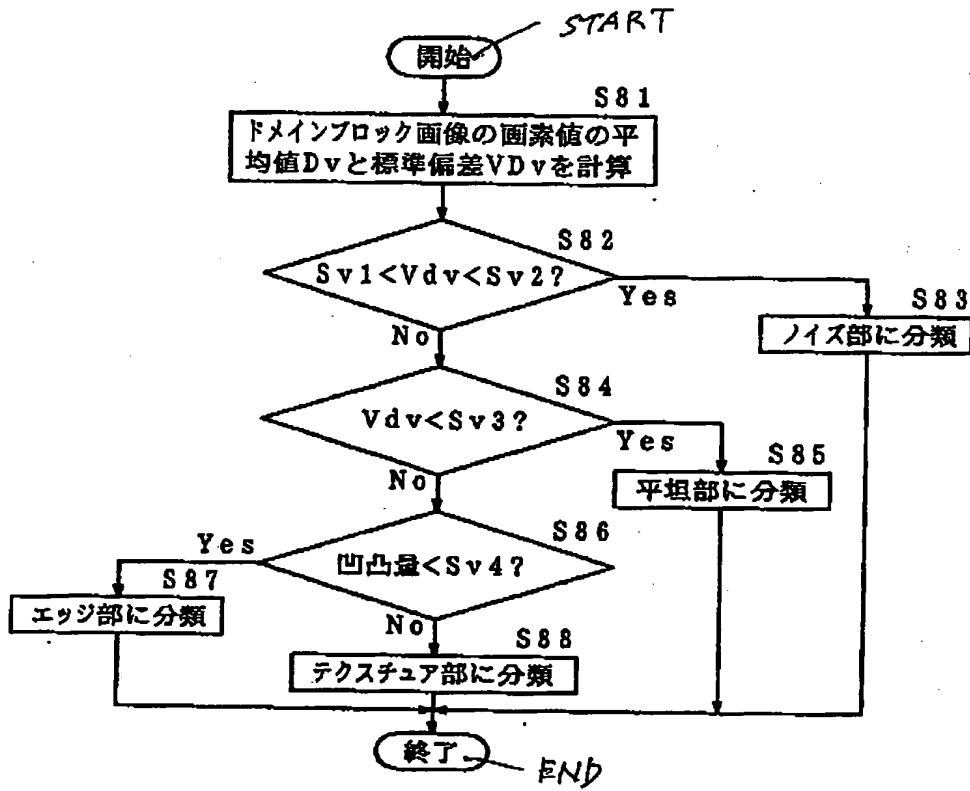
ORIGINAL IMAGE  
原画像



3x3ドメインブロック  
画像の一つ  
ONE OF 3x3 DOMAIN BLOCK IMAGES

FIG. 5

図5



~~図 6~~

FIG. 6A

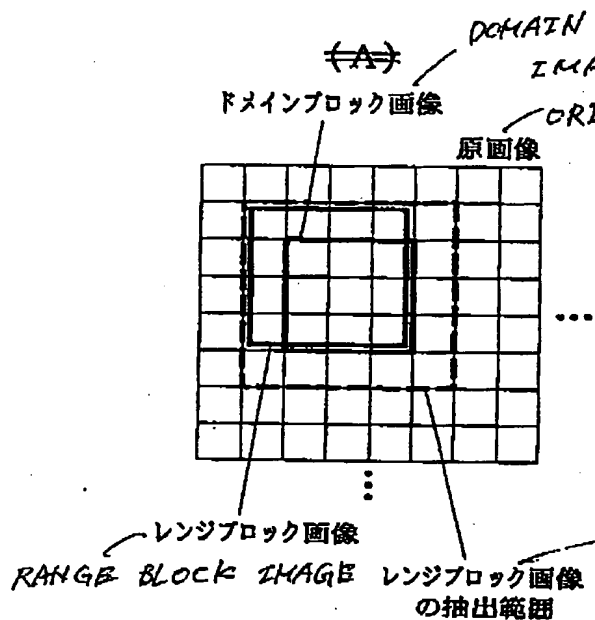


FIG. 6C

(C)

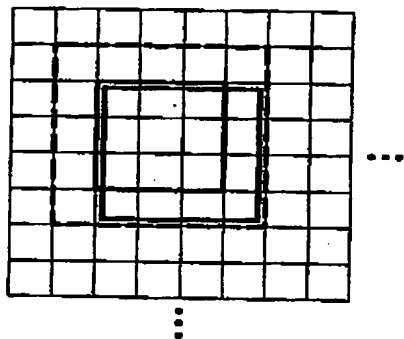


FIG. 6B

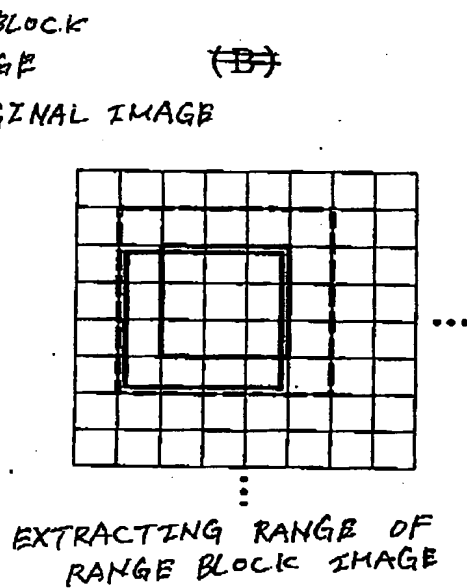
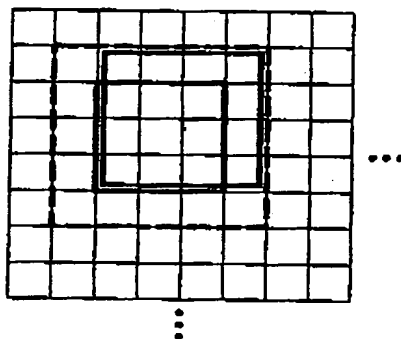


FIG. 6D

(D)





~~FIG. 7A~~ FIG. 7A

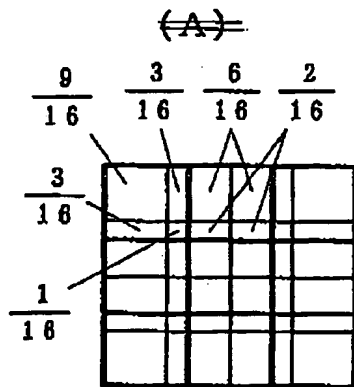


FIG. 7B

~~(B)~~

P <sub>11</sub>	P <sub>21</sub>	P <sub>31</sub>	P <sub>41</sub>
P <sub>12</sub>	P <sub>22</sub>	P <sub>32</sub>	P <sub>42</sub>
P <sub>13</sub>	P <sub>23</sub>	P <sub>33</sub>	P <sub>43</sub>
P <sub>14</sub>	P <sub>24</sub>	P <sub>34</sub>	P <sub>44</sub>

投影法縮小

~~(C)~~

REDUCE BY

PROJECTION  
METHOD

FIG. 7C

Q <sub>11</sub>	Q <sub>21</sub>	Q <sub>31</sub>
Q <sub>12</sub>	Q <sub>22</sub>	Q <sub>32</sub>
Q <sub>13</sub>	Q <sub>23</sub>	Q <sub>33</sub>

FIG. 8A

(A) IMPROVED DOMAIN BLOCK IMAGE  
改良ドメインブロック画像

P <sub>11</sub>	P <sub>21</sub>	P <sub>31</sub>
P <sub>12</sub>	P <sub>22</sub>	P <sub>32</sub>
P <sub>13</sub>	P <sub>23</sub>	P <sub>33</sub>

FIG. 8B

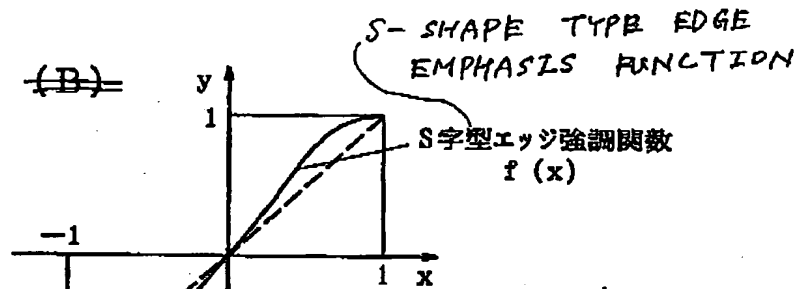


FIG. 8C

EDGE-EMPHASIZED IMPROVED DOMAIN BLOCK IMAGE  
エッジ強調済改良ドメインブロック画像

Q <sub>11</sub>	Q <sub>21</sub>	Q <sub>31</sub>
Q <sub>12</sub>	Q <sub>22</sub>	Q <sub>32</sub>
Q <sub>13</sub>	Q <sub>23</sub>	Q <sub>33</sub>

エッジ強調処理

EDGE EMPHASIS PROCESSING

FIG. 9

FIG. 9

3x3 BLOCK AREA

3x3ブロック領域

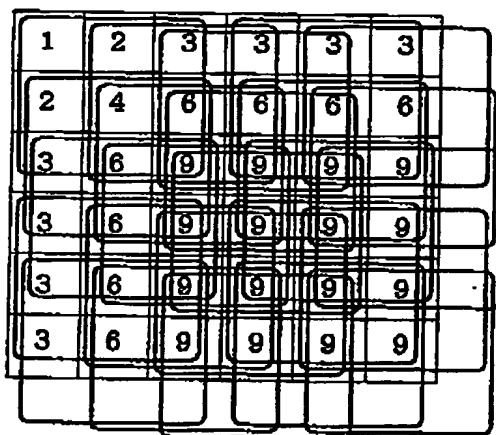
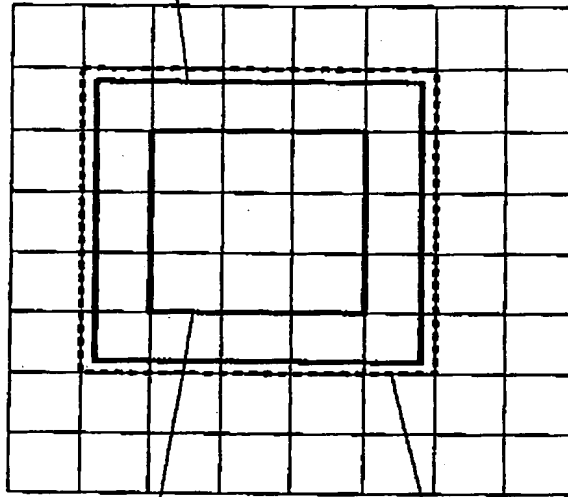


FIG. 10

~~図10~~

5×5レンジブロック画像 — 5×5 RANGE BLOCK IMAGE

原画像 — ORIGINAL IMAGE



3×3ドメインブロック  
画像の一つ

レンジブロック画像  
の抽出範囲

ONE OF 3×3 DOMAIN BLOCK IMAGE

EXTRACTING RANGE OF  
RANGE BLOCK IMAGE

~~FIG. 11A~~ FIG. 11A

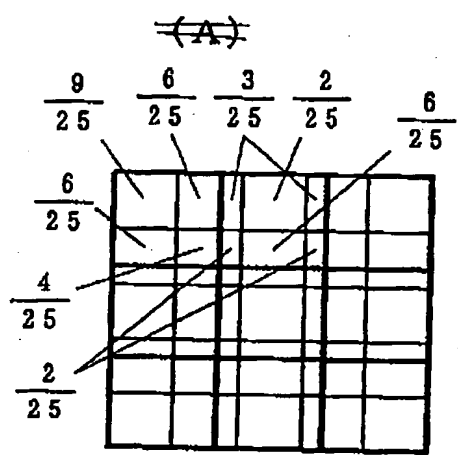


FIG. 11B

(B)

P <sub>11</sub>	P <sub>21</sub>	P <sub>31</sub>	P <sub>41</sub>	P <sub>51</sub>
P <sub>12</sub>	P <sub>22</sub>	P <sub>32</sub>	P <sub>42</sub>	P <sub>52</sub>
P <sub>13</sub>	P <sub>23</sub>	P <sub>33</sub>	P <sub>43</sub>	P <sub>53</sub>
P <sub>14</sub>	P <sub>24</sub>	P <sub>34</sub>	P <sub>44</sub>	P <sub>54</sub>
P <sub>15</sub>	P <sub>25</sub>	P <sub>35</sub>	P <sub>45</sub>	P <sub>55</sub>

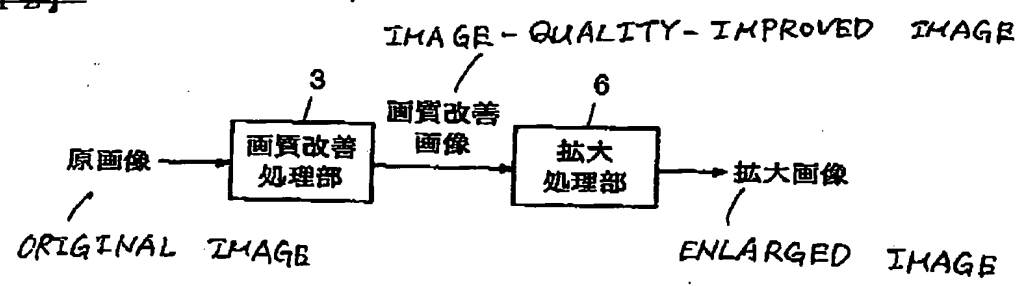
↓ 投影法縮小  
↓ REDUCE BY PROJECTION METHOD

FIG. 11C

Q <sub>11</sub>	Q <sub>21</sub>	Q <sub>31</sub>
Q <sub>12</sub>	Q <sub>22</sub>	Q <sub>32</sub>
Q <sub>13</sub>	Q <sub>23</sub>	Q <sub>33</sub>

~~FIG. 12~~

FIG. 12



~~【図13】~~

FIG. 13

